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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,919	04/21/2000	Akinori Furuya	032590-055	2803

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EXAMINER

BERNATZ, KEVIN M

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 06/24/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-19

Office Action Summary

Application N .

09/529,919

Applicant(s)

FURUYA ET AL.

Examiner

Kevin M Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. Amendments to claims 1, 3, 13 and 14, filed on June 6, 2003, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claim 1 is objected to because of improper Markush language. The proper language is either "...selected from a group consisting of A, B, C and D." or "...is A, B, C or D." See MPEP § 2173.05(h). The Examiner is unclear about what additional scope applicants are seeking to cover or exclude by the use of the word "essentially" after consisting. For purposes of evaluating the prior art, the Examiner has interpreted this limitation as a standard Markush group limitation.

Claim Rejections - 35 USC § 103

4. Claims 1, 2, 4 – 6 and 8 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida ('710).

Regarding claim 1, Machida discloses a magneto-optical recording medium having a recording layer (*Figure 5, element 13*) and a reflective layer (*element 21 and col. 11, lines 6 - 10*) on a substrate (*element 11*) characterized in that the recording

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layer has a layered structure comprising a garnet-ferrite first magnetic layer (*element 17, col. 2, lines 50 – 58*), and at least one second magnetic layer (i.e. applicants' "underlayer for the garnet ferrite recording layer") selected from the group consisting essentially of a spinel ferrite layer, a rutile-type oxide layer and a hematite layer are layered (*element 15, col. 2, lines 58 – 60*), wherein the "garnet ferrite recording layer" is formed adjacent to the "underlayer" after the formation of the "underlayer" (*Figure 5*).

The limitation "thereby reducing the internal compressive stress of the garnet ferrite layer by the tensile stress provided from the underlayer" is a functional limitation. As defined in the MPEP, "[a] functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971)" – MPEP § 2173.05(g). However, the examiner notes that "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an ***inherent characteristic of the prior art***, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristics relied on" (emphasis added) - MPEP § 2183.

In the instant case, the claimed limitation(s) "thereby reducing the internal compressive stress of the garnet ferrite layer by the tensile stress provided from the underlayer" is deemed to be a function that inherently results when a magneto-optical

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recording medium meeting applicants' claimed structural limitations is utilized, e.g., a garnet-ferrite recording layer deposited over a spinel ferrite underlayer. The examiner's sound basis for this assertion is that all layers possess internal stresses and the interaction of these stresses is influenced by the bonding characteristics with adjacent layers.

Therefore, since the claimed and prior art structures are substantially identical, i.e. embodiments comprising a garnet-ferrite recording layer deposited over a spinel ferrite underlayer, the Examiner deems that the disclosed embodiments would inherently meet the limitation "thereby reducing the internal compressive stress of the garnet ferrite layer by the tensile stress provided from the underlayer".

Machida fails to explicitly disclose a garnet ferrite recording layer meeting applicants' claimed composition limitation.

However, Machida teaches using iron garnet ferrite as the recording layer (*col. 2, lines 36 – 60*) and further teaches known iron garnet materials meeting applicants' claimed composition limitations as known garnet ferrite materials (*col. 10, lines 19 – 34; Table 1, A-12 and Table 5, C-1 to C-7*).

Since garnet ferrites meeting applicants' claimed composition limitations are known garnet ferrite materials useable in magneto-optic films, as taught by Machida, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a garnet ferrite meeting applicants' claimed composition limitation, since it has been held to be within the general skill of a worker in the art to select a known

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material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claim 2, Machida discloses tracks wherein the layer structure is recorded is formed at least on the tracks (*Figure 7 and col. 11, lines 40 - 51*). The limitation(s) "on which data are recorded" is (an) intended use limitation(s) and is not further limiting in so far as the structure of the product is concerned. "[I]n apparatus, article, and composition claims, intended use must result in a **structural difference** between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. ***If the prior art structure is capable of performing the intended use, then it meets the claim.*** In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art." [emphasis added] *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2111.02. As noted in the Office Action mailed on February 6, 2003, data can be recorded on the lands or grooves (or both) of the guide tracks.

Regarding claims 4 and 5, Machida discloses embodiments meeting applicants' claimed structural limitations (*Figures 4 and 5, where element 11 is the substrate, 13 is the recording layer and 21 is the reflecting layer*).

Regarding claims 6 and 8, Machida disclose thickness values meeting applicants' claimed limitations (*col. 6, lines 6 – 9 and col. 8, lines 32 – 35 wherein at least the endpoints of the disclosed plus claimed ranges overlap*).

Regarding claims 9, Machida discloses grooves meeting applicants' claimed limitations (*Figure 7*).

Regarding claims 10 - 12, Machida discloses a transparent layer/load layer meeting applicants' claimed limitations (*Figures 4, 6 and 7 – element 19; and col. 11, lines 1 – 5*). The examiner notes that element 19 is deemed to be inherently transparent because (a) the materials used are known transparent dielectric materials used in magneto-optical applications, and (b) since the purpose of the layer is to prevent heat from diffusing into the reflecting layer (*col. 11, lines 1 – 5*) the light must be incident on element 19 before being incident on the reflecting layer in order to prevent the heat from diffusing into the reflecting layer. Since the reflecting layer is designed to reflect the laser light, the light must pass through element 19 to be reflected by the reflecting layer.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Machida as applied above, and further in view of Shimokawa et al. ('913) and Tamari ('261).

Machida is relied upon as described above.

Machida fails to disclose a recording layer possessing a plurality of both garnet ferrite layers and spinel ferrite layers.

However, Tamari teaches that a plurality of spinel ferrite layers can result in a magneto-optical film having "excellent perpendicular magnetic anisotropy and magneto-optical characteristics" (*col. 4, lines 31 – 61; and col. 9, lines 18 – 48*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Machida to utilize a spinel ferrite layer possessing a plurality of spinel ferrite layers as taught by Tamari in order to produce a layer having excellent perpendicular magnetic anisotropy and magneto-optical characteristics.

Neither Tamari nor Machida disclose a recording layer possessing a plurality of garnet ferrite layers.

However, Shimokawa et al. teach that a plurality of garnet layers can result in a magneto-optical film having fine grains and exhibiting high performance (*col. 2, lines 40 – 67; col. 3, lines 12 – 25; and col. 5, lines 33 – 48*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Machida in view of Tamari to utilize a garnet ferrite layer possessing a plurality of garnet ferrite layers as taught by Shimokawa et al. in order to produce a magneto-optical film having fine grains and exhibiting high performance.

Allowable Subject Matter

6. The following is a statement of reasons for the indication of allowable subject matter: claim 3 is indicated as containing allowable subject matter because the prior art, while teaching using land and grooves for magneto-optical recording media, does not teach or render obvious the use of only garnet ferrite layers between said tracks (i.e. in the grooves).

Response to Arguments

7. The rejection of claims 1, 2, 4 – 6 and 8 - 12 under 35 U.S.C § 102(b) -

Machida

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Applicants' amendment resulted in embodiments not previously considered (i.e. the specific garnet ferrite composition) which necessitated the new grounds of rejection, and hence the finality of this action.

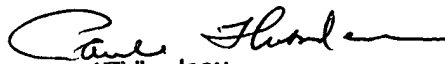
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB
June 21, 2003



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700